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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/689,755

10/21/2003

Kazuhito Sacki

3140-016

6009

33432 7590 05/09/2008

KILYK & BOWERSOX, P.L.L.C.

400 HOLIDAY COURT

SUITE 102

WARRENTON, VA 20186

EXAMINER

LIEW, ALEX KOK SOON

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/689,755 | Applicant(s) SAEKI, KAZUHIITO | |
| | Examiner ALEX LIEW | Art Unit 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action is in response to the RCE filed on 2/26/08.
2. The amendment made to claims 1, 4 and 5 overcomes the Yamagata (US pat no 6,021,222) reference; Yamagata does not disclose "window elements are capable of mutually overlapping in the width direction of the edge window" The examiner will introduce Tsuchiya (US pat no 5,475,766). Details discuss below.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of Tsuchiya '766.

With regards to claim 1, Yamagata discloses an image processing apparatus comprising

an edge window setting unit for an edge window for detecting edges of an image (see column 8 lines 5 – 7, the gradient vector calculator find potential edges in image and find areas candidate shown in figure 4A);

an element setting unit for selectively setting a plurality of window elements in the one edge window set by said edge window setting unit (see figure 4A, there are windows placed on the edges of the images labeled areas A, B and C)

an edge detection unit for scanning each of the window elements and obtaining edges every each the window element (see column 8 lines 63 to 67 and figure 4B) and a calculation unit for obtaining an edge related information from the edges detected by said detection unit (see figure 2, element 3).

Yamagata does not disclose the window elements are capable of mutually overlapping in the width direction of the edge window. Tsuchiya discloses window elements are capable of mutually overlapping in the width direction of the edge window (see figure 20, on the top picture the two window elements overlaps each other). One skilled in the art would include step of overlapping window elements because to prevent missing any corner edges to improve edge detection process. Tsuchiya also disclose imaging a workpiece shown in figure 1 in element 1.

With regards to claims 4 and 5, see the rationale and rejection for claim 1.

With regards to claim 12, Yamagata discloses said edge window set by the edge window setting unit has a height that is equal to the height of each of the plurality of window elements (see figure 4A and 4B, the windows area).

With regards to claim 13, Yamagata discloses element setting unit sets the number of window elements and width of each window element (see figure 4A and 4B, three window elements are set and the width is 5 pixels).

3. Claims 2, 3, 6 and 7 – 11 are rejected under U.S.C. 103(a) as being unpatentable over Yamagata ('222) in view of official notice as applied to claim 1 further in view of Lopez (US pat no 6,148,117).

With regards to claim 2, Yamagata discloses all the limitations discussed in claim 1, but does not disclose having user select parameter of filtering process. Lopez suggests having the operator select various parameters such as resolution and sharpening coefficients (see column 6 lines 40 to 45) and these the size of the filters maybe selected from a group of filters of different sizes (see column 7 lines 2 to 9). One skilled in the ordinary art would include having the user select a filter kernel size because to have user experiment with the different sizes to find the filter which produces the best result and allows a user to create the exact desired effect.

With regards to claim 3, Yamagata discloses a image processing apparatus as defined in claim 1, wherein said element setting unit sets the plurality of window elements based on a distance between adjacent window elements (see figure 2, 2, the gradient calculator detects candidates of edge region and a window is placed over them), but does not have the user selects the location to place each window. Lopez suggests

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having the operator select various parameters (see column 6 lines 40 to 45). The combination of Yamagata and Lopez disclose the claimed invention of claim 3. One skilled in the ordinary art would have the user select where to place the window because the gradient calculate may extract false edges that will result is error, having an operator to place the window may prevent errors.

With regards to claim 6, see the rationale and rejection for claim 2.

With regards to claim 7, see the rationale and rejection for claim 3.

With regards to claim 8, Yamagata and Tsuchiya disclose all the limitations of claim 1; Yamagata discloses a image processing apparatus of claim 1, wherein said plurality of window elements has a width and there is a distance between the beginning of each said window elements, wherein said width and said distance are assigned automatically inside said edge window (see figure 4A and 4B, there is a distance between window element A and B), but does not have the user selects the location to place each window. Lopez suggests having the operator select various parameters (see column 6 lines 40 – 45). The combination of Yamagata and Lopez disclose the claimed invention of claim 3. One skilled in the ordinary art would have the user select where to place the window because the gradient calculate may extract false edges that will result is error, having an operator to place the window may prevent errors.

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With regards to claim 9, Yamagata discloses an image processing apparatus of claim 1, wherein when said element setting unit sets the plurality of window elements inside said edge window, a setting is performed so that the window elements are always present in one end and the other end of the edge window (see figure 6B, 15r and 15l are the two end of the edge window).

With regards to claim 10, see the rationale and rejection for claim 8.

With regards to claim 11, see the rationale and rejection for claim 9.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of Tsuchiya '766 as applied to claim 1 further in view of Kobayasi (US pat no 5,136,661).

With regards to claim 14, Yamagata and Tsuchiya disclose all the limitations of claim 1, but do not disclose edge window comprises two opposing ends and the element setting unit arranges the window elements at both ends of the edge window. Kobayasi discloses window comprises two opposing ends and the element setting unit arranges the window elements at both ends of the edge window (see figure 3H). One skilled in the art would arrange window elements at both ends of an edge window because to detect the number of pins in an integrate circuit to improve edge detection method.

5. Claims 15 and 17 are rejected under U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of official notice (MPEP 2144.03) as applied to claim 1 further in view of Lopez '117.

With regards to claim 15, Yamagata discloses an image processing apparatus comprising

- an edge window setting unit for an edge window for detecting edges of an image (see column 8 lines 5 – 7 – the gradient vector calculator find potential edges in image and find areas candidate shown in figure 4A);

- an element setting unit for selectively setting a plurality of window elements in the one edge window set by said edge window setting unit (see figure 4A – there are windows placed on the edges of the images labeled areas A, B and C);

- an edge detection unit for scanning each of the window elements and obtaining edges every each the window element (see column 8 lines 63 – 67 and figure 4B); and

- a calculation unit for obtaining an edge related information from the edges detected by said detection unit (see figure 2 – 3).

Yamagata does not disclose detecting edges of a work-piece in an image though it does detect edges in an image. It is well known in the art of image analysis to detect edges in electronic circuit in an image. One skilled in the ordinary art would include detecting edges of a work-piece in an image because to inspect the quality of the electronic devices in order to detect defects present in electronic devices, to improve quality of the

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electronic devices. Yamagata does not disclose having user define width of the window elements.

Lopez suggests having the operator select various parameters such as resolution and sharpening coefficients (see column 6 lines 40 – 45) and these the size of the filters maybe selected from a group of filters of different sizes (see column 7 lines 2 – 9). One skilled in the ordinary art would include having the user select a filter kernel size because to have user experiment with the different sizes to find the filter which produces the best result and allows a user to create the exact desired effect.

With regards to claim 17, Yamagata discloses element setting unit sets the number of window elements and width of each window element (see figure 4A and 4B).

6. Claim 18 is rejected under U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of official notice (MPEP 2144.03) and Lopez '117 as applied to claim 15 further in view of Tsuchiya '766.

With regards to claim 18, see the rationale and rejection for claim 1.

7. Claim 19 is rejected under U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of official notice (MPEP 2144.03) and Lopez '117 as applied to claim 15 further in view of Kobayasi '661.

With regards to claim 19, see the rationale and rejection for claim 14.

8. Claim 16 is rejected under U.S.C. 103(a) as being unpatentable over Yamagata '222 in view of official notice (MPEP 2144.03) and Lopez '117 as applied to claim 15 further in view of Shimomae (US pat no 5,327,260)

With regards to claim 16, Yamagata and Lopez disclose all the limitations of claim 15, do not disclose window element has a height equal to the height of the edge window set by said edge window setting unit. Shimomae discloses window element has a height equal to the height of the edge window set by said edge window setting unit (see figure 38A, the shaded portion in the window element and the entire image is the edge window). One skilled in the art would include having the window element height the same height as the height of the edge window because to avoid missing pixels to the detected as edge pixels, to improve edge detection method.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
Supervisory Patent Examiner, Art
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5/2/08